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IS 3721 (1966): Cheese Cutting Knives for Table Use [MTD
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Indian Standard
**SPECIFICATION FOR
CHEESE CUTTING KNIVES FOR
TABLE USE**

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**BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002**

Indian Standard

SPECIFICATION FOR CHEESE CUTTING KNIVES FOR TABLE USE

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Indian Standard

SPECIFICATION FOR CHEESE CUTTING KNIVES FOR TABLE USE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 26 September 1966, after the draft finalized by the Cutlery Sectional Committee had been approved by the Consumer Products Division Council.

0.2 This standard dealing with the cheese cutting knives for table use is one of a series of Indian Standards for cutlery items formulated at the instance of the Chief Inspectorate of General Stores (Ministry of Defence) and Office of the Development Commissioner, Small Scale Industries (Ministry of Industry). Other standards published so far in the series are given on the 4th cover.

0.3 The cheese cutting knife used at the table is meant both for cutting the cheese as well as serving it. It has become an important item of table cutlery and a need has, therefore, been felt for standardizing the item. It is hoped that the standard will help production of a good design of cheese cutting knife as otherwise the cutting or serving purpose may be impaired.

0.4 This standard contains clauses which call for agreement between the purchaser and the supplier and which permit the purchaser to use his option for selection to suit his requirements. The relevant clauses are **3.1**, **3.2**, **6.2** and **9.1**.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements for cheese cutting knives for table use made of stainless steel with:

- a) stainless steel solid handles forged with blades, or
- b) stainless steel or nickel silver hollow handles, or
- c) plastics handles.

*Rules for rounding off numerical values (*revised*).

IS : 3721 - 1966

2. MATERIALS

2.1 Blades and handles in the case of solid handles forged integral with blades shall be made from stainless steel conforming to Designation 30Cr13 Schedule V of IS : 1570-1961*.

2.2 Handles

2.2.1 Stainless Steel Hollow Handles — These shall be made of stainless steel conforming to Designation 07Cr19Ni9 of Schedule V of IS : 1570-1961*.

2.2.2 Nickel Silver Hollow Handles — These shall be made of nickel silver conforming to Grade NS10 or NS20 specified in IS : 2283-1962†.

2.2.3 Plastics Handles — The plastics material shall be free from harmful substances and shall resist the action of dilute organic acids and shall not be so inflammable as to burst into flames when a lighted match is applied to it.

3. SHAPES AND DIMENSIONS

3.1 The knives shall conform to shape and dimensions as given in Fig. 1. However, the knives may also have shapes and dimensions other than those given in this standard subject to agreement between the purchaser and the supplier, but in all other respects, the knives shall conform to this standard.

3.2 The design of the handles of knives shall be as agreed to between the manufacturer and the purchaser. When spoons, forks and knives are required to be supplied in sets, the design of the handles and general appearance of the items in a set shall match.

4. MANUFACTURE

4.1 The knife with solid handle shall be forged in one piece.

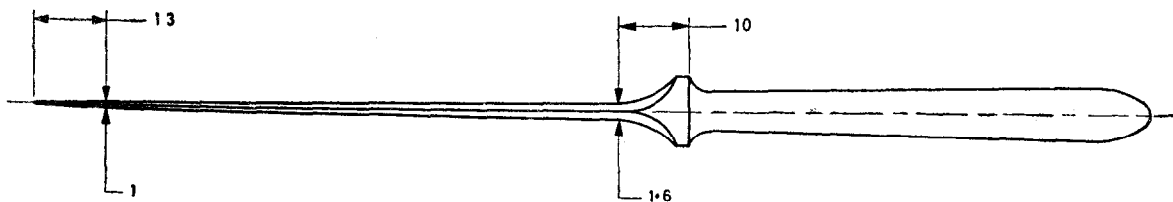
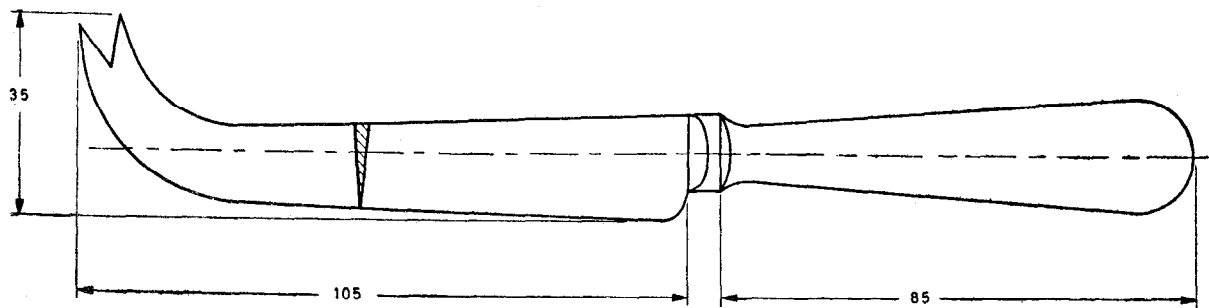
4.2 The knife with hollow handle shall have the blade forged and the tang well-drawn. The handle scales shall fit closely to the tang and shall be finished flush and smooth. In case of hollow handles made of stainless steel, the joints shall be welded, and in case of nickel silver hollow handles, the joints shall be silver soldered.

4.3 When the plastics handles are cast they shall be soundly moulded on the tang which shall be properly shaped and grooved. The end of the tang shall be at least 15 mm away from the free end of the handle. When plastics handles are fitted, the length of the tang shall be at least 65 mm to ensure rigid fixing.

4.4 The blades shall be properly ground and tapered uniformly from the back to the cutting edge which shall be sharp and ready for use. The picking end of the knife shall have two pointed prongs which shall not be too sharp.

*Schedules for wrought steels for general engineering purposes.

†Specification for nickel silver sheet and strip for general purposes.



All dimensions in millimetres.

FIG. 1 CHEESE CUTTING KNIFE

5. HARDNESS

5.1 The blade shall be uniformly hardened and tempered to give a hardness of 450 to 550 HV.

6. WORKMANSHIP AND FINISH

6.1 Workmanship — The knives shall be free from cracks, seams, scales, pits, burrs, grinding marks and other defects. They shall be finished smooth all over and polished bright. All edges and corners except the cutting edge and the picking prongs shall be slightly rounded. The cutting edge of the blade and the picking prongs shall lie in the central plane of the handle so as to give a balanced cutting and picking action.

6.2 Finish — The hollow handles made from NS20 Grade of nickel silver shall be unplated unless otherwise specified by the purchaser. The hollow handles made from NS10 Grade of nickel silver shall be supplied in any one of the following finishes:

<i>Finish</i>	<i>Minimum Thickness</i>
Nickel	15 microns
Chromium over nickel:	
a) Nickel	15 microns
b) Chromium	0.5 microns
Silver	40 microns

6.2.1 The plating shall conform to IS : 1068-1958* in the case of nickel and chromium plating and to IS : 1067-1958† in the case of silver plating.

7. MARKING

7.1 Each knife shall be legibly and indelibly etched near the bolster with the word 'stainless steel' and the manufacturer's name, initials or trademark and the words 'Made in India'.

7.1.1 The knives may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

*Specification for copper, nickel and chromium electroplated coatings.

†Specification for commercial silver-plating.

8. PACKING

8.1 The knives shall be wrapped in soft tissue paper or wax-paper and packed in cartons. Each carton shall bear the type and the number of knives it contains, name of the manufacturer and the country of manufacture.

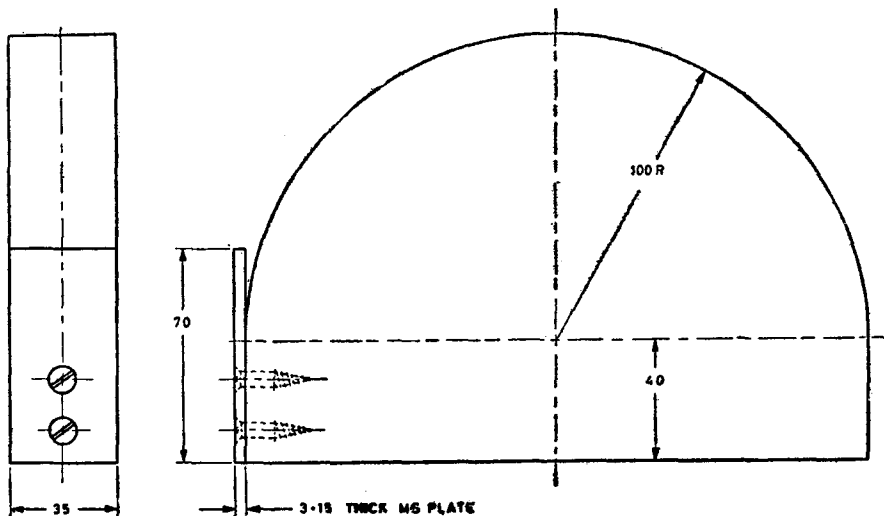
9. SAMPLING

9.1 Sampling and acceptance criteria for cheese cutting knives shall be as agreed to between the purchaser and the supplier. A recommended scheme for the same is given in Appendix A.

10. TESTS

10.1 Test for Cutting Edge— The cutting edge of the knife shall be made to strike three full blows in succession from a height of 200 mm on an aluminium block of not less than 99 percent purity or a block of teak wood having 12 percent moisture content. The cutting edge shall not show any sign of damage or distortion after the test.

10.2 Flexibility Test— The blade shall be bent to lie on the periphery of a wooden segment of 100 mm radius and at least 35 mm in thickness (see Fig. 2). The blade shall not show any permanent set or damage on the completion of test.



All dimensions in millimetres.

FIG. 2 WOODEN SEGMENT FOR FLEXIBILITY TEST

10.3 Staining Test for Stainless Steel Knives and Blades — The knives, when dipped for 16 hours in a solution of five grams of glacial acetic acid (99 percent) dissolved in distilled water to make 100 ml, shall not show any sign of staining after removal from the solution.

10.4 Test for Hollow Handles — The hollow handles after fitting shall be immersed for 30 seconds in clean air-free water maintained at 80°C. There shall not be any expulsion of air bubbles from within the handle.

10.5 Tests for Knives with Plastics Handles

10.5.1 Boiling — The knife shall be immersed for one hour in a boiling 5 percent soap solution, then rinsed immediately in water at 15° to 20°C and immediately reimmersed completely in boiling water for one hour. The knife shall then be rinsed again in water at 15° to 20°C and then dried for an hour in an oven maintained at 60°C. This procedure shall be repeated four times. On completion of the test, the handle shall not show any sign of cracking, chipping or discoloration of the plastics and the tang shall neither become loose nor shall there be any other damage.

10.5.2 Impact — This test shall be conducted after the boiling test. The knife shall be held with the handle facing downwards and dropped from a height of 1.2 m on a concrete floor five times in succession. The handle shall not show any sign of cracking, breaking or chipping of the plastics and the tang shall neither become loose nor shall there be any other damage.

10.5.3 The plastics handle shall be cut into three pieces and each piece shall be immersed in one of the following solutions maintained at room temperature:

- a) Sodium chloride solution, 10 percent (w/v);
- b) Acetic acid solution, 5 percent (v/v); and
- c) Sodium carbonate, 2 percent (w/v).

Each piece shall be taken out after 24 hours, rinsed with tap water and wiped with a dry cloth. It shall then be examined and immersed again in the same solution. This procedure shall be repeated seven times. During and at the end of seven days test there shall be no perceptible change in the appearance of the plastics material.

APPENDIX A

(Clause 9.1)

RECOMMENDED SAMPLING SCHEME AND CRITERIA FOR CONFORMITY FOR CHEESE CUTTING KNIVES

A-1. LOT

A-1.1 In any consignment, all the knives of the same type and manufactured from the same raw materials under relatively similar conditions of manufacture shall be grouped together to constitute a lot.

A-1.2 For ascertaining the conformity to the requirements of this standard, sample of knives shall be selected and tested separately for each lot.

A-2. SELECTION OF SAMPLE

A-2.1 The number of knives to be selected at random from a lot shall depend upon the size of the lot and shall be in accordance with col 1 and 2 of Table 1.

TABLE 1 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

LOT SIZE (NUMBER OF KNIVES IN THE LOT)	FOR REQUIREMENTS UNDER 3.1, 4, 5.1 and 6		FOR TESTS UNDER 10.1 to 10.5	
	Sample Size	Acceptance Number	Sub-sample Size	Acceptance Number
(1)	(2)	(3)	(4)	(5)
Up to 50	8	0	3	0
51 " 100	13	0	5	0
101 " 150	20	1	7	0
151 " 300	32	2	10	0
301 " 500	50	3	12	0
501 " 1 000	80	5	14	0
1 001 " 3 000	125	7	16	0
3 001 and above	200	10	20	1

A-2.2 The knives in the sample shall be selected at random from the lot and in order to ensure the randomness of selection, random number tables may be used. In case the knives are packed in cartons, as a first step at least 25 percent of the cartons shall be selected at random, and then from each selected carton, approximately equal number of knives shall be taken out at random so as to make the required sample size.

A-3. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-3.1 The knives selected according to **A-2.1** and **A-2.2** shall be inspected for shapes and dimensions (*see 3.1*), manufacture (*see 4*), hardness (*see 5.1*), and workmanship and finish (*see 6*). A knife failing in any one or more of these requirements shall be considered as defective. The lot shall be considered as conforming to the requirements of the characteristics mentioned above if the number of defective knives in the sample does not exceed the number given in col 3 of Table 1.

A-3.2 The lot having found conforming according to **A-3.1** shall be tested for cutting edge test (*see 10.1*), flexibility test (*see 10.2*), staining test (*see 10.3*), and tests for hollow handles (*see 10.4*) or plastics handles (*see 10.5*) (whichever is applicable). For this purpose a sub-sample of size given in col 4 of Table 1 shall be taken from the knives selected as in **A-2.1** and **A-2.2**. Each of the knives in sub-sample shall be subjected to the tests mentioned above. A knife failing in any one or more of the tests shall be considered as defective. The lot shall be considered as conforming to the requirements of the tests if the number of defective knives in the sub-sample does not exceed the number given in col 5 of Table 1.

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